

the ATCC on August 2, 2002, and the strain accorded accession number ATCC PTA-4004. The required certificate of viability for V27 was issued by the ATCC on May 21, 2002, and the strain accorded accession number ATCC PTA-4296.”

## **2. RESPONSE**

### **2.1 STATUS OF THE CLAIMS**

Claims 41-43, 45-49, 57, 61, and 63-78 were pending at the time of the Action.

Claims 41, 61, 73, and 74 are amended herein.

Claims 42, 43, and 48 are cancelled herein without prejudice and without disclaimer.

Claims 41, 45-47, 49, 57, 61, and 63-78 remain pending in the case.

Applicants note for the record that all claims were free from rejection under 35 U. S. C. § 101; 35 U. S. C. § 112, 2<sup>nd</sup> paragraph, 35 U. S. C. § 102, and 35 U. S. C. § 103.

### **2.2 SUPPORT FOR THE CLAIMS**

Complete support for each of the claims as amended herein is provided by the specification and original claims as filed. Applicants certify that no new matter has been introduced as a result of the accompanying amendment.

### **2.3 THE REQUIRED BIOLOGICAL DEPOSIT INFORMATION IS ENTERED INTO THE SPECIFICATION FOR COMPLIANCE**

Applicants have complied with the Examiner's request to amend the specification to include the language required for compliance with the rules concerning the deposit of biological materials. The two strains deposited with the ATCC have been identified, and the language

including the name of the depository, address, accession number, and date of deposits have been added for compliance. Applicants believe that this fully complies with the rules and requests that the rejection of claims under 35 U. S. C. §112, 1<sup>ST</sup> paragraph.

**2.4 THE REJECTION OF CLAIMS 41-43, 45-49, 57, 61, AND 63-78 UNDER 35 U. S. C. §112, 1<sup>ST</sup> PARAGRAPH, HAS BEEN OVERCOME.**

These claims have been rejected under 35 U. S. C. §112, 1<sup>ST</sup> paragraph, as allegedly containing subject matter which was not described in the specification in such as way as to enable one of skill in the art to make and/or use the invention. Applicants have amended the specification to include the required ATCC Accession numbers of the biological materials deposited under terms of the Budapest Treaty, and the required viability statement pursuant to Rule 10.2 and disclaimer. Copies of the viability statements for PTA-4004 and PTA-4296 are attached hereto as Exhibit A. Applicants now believe that all claims are free from further rejection under this section of the Statute, and respectfully request that the rejection be withdrawn.

**2.5 THE REJECTION OF CLAIMS 41-43, 45-49, 57, AND 63-78 UNDER 35 U. S. C. §112, 1<sup>ST</sup> PARAGRAPH, HAS BEEN OVERCOME.**

These claims have been rejected under 35 U. S. C. §112, 1<sup>ST</sup> paragraph, as allegedly containing subject matter which was not described in the specification in such as way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicants respectfully traverse.

The Office takes the position that the clarifying language introduced into claim 41 in the previous amendment introduces new matter in that there is allegedly no literal support in the

specification and claims as originally filed for the limitation that a segment is isolated from HSV d27.1rc and comprised with the recombinant HSV.

Without acquiescing in any way on the merits of this rejection, and solely to place the claims in condition for allowance, or in the alternative, better in condition for appeal, Applicants have removed the language "isolated from" in claim 41, and incorporated the language of dependent claims 42, 43, and 48 into the independent claim to recite "A recombinant herpes simplex ICP27 deletion mutant viral vector that comprises a DNA segment comprising an adeno-associated virus rep coding sequence and an adeno-associated virus cap coding sequence, wherein each of said coding sequences is operably linked to a promoter selected from the group consisting of a p19, p40, CMV 40, HIV LTR, HCMV IE, and an HSV 110 promoter."

This language more closely mirrors the language of original claims 16 and 17, and support is found in the Specification at least on page 6, line 30, bridging page 7, line 6 that recites "DNA segments comprising an AAV rep coding sequence operably linked to a promoter, (and) an AAV cap coding sequence operably linked to a promoter...." Page 7 line 2 states that in preferred embodiments, the AAV rep and cap coding sequences are operably linked to a "p5, p19, or p40 promoter." This language is also found in original claim 7. Page 9, lines 30-31 state that the promoter may also be "an HSV110 promoter." Page 14, lines 13-15 state that substitution of "heterologous promoters such as the HIV LTR or the HCMV IE promoter to drive Rep or Cap expression has been shown to increase the production of rAAV in transfection systems."

Thus, the language of claim 41 as amended does not include new matter, and is also free of the previously cited prior art, as the references previously applied against earlier independent claims neither teach or fairly suggest, either alone or in combination, "A recombinant herpes

simplex ICP27 deletion mutant\_viral vector that comprises-a DNA segment comprising an adeno-associated virus Rep coding sequence and an adeno-associated virus Cap coding sequence, wherein each of said coding sequences is operably linked to a promoter selected from the group consisting of a p19, p40, CMV 40, HIV LTR, HCMV IE, and an HSV 110 promoter.” As such, Applicants believe the present claims are free from rejection under any section of the Statutes, and respectfully requests that the Section 112 rejection be withdrawn, and that the claims proceed to allowance.

**2.6 THE REJECTION OF CLAIMS 73 AND 74 UNDER 35 U. S. C. §112, 1<sup>ST</sup> PARAGRAPH, HAS BEEN OVERCOME.**

These claims have been rejected under 35 U. S. C. §112, 1<sup>st</sup> paragraph, as allegedly containing subject matter which was not described in the Specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Applicants respectfully traverse, and appreciate the helpful suggestions of the Examiner in clarifying the language of these claims to more precisely focus on the instant invention, namely providing HSV vectors for the large-scale production of AAV vectors in selected host cell cultures, and in particular mammalian host cell cultures, such as human cells. The specification in the first full paragraph of Section 2.0 states that “Superinfection of appropriate *host cell cultures* with the vectors described herein produces quantities of rAAV not attainable by any other means.” (emphasis added). Exemplary host cell cultures to which the claimed compositions may be administered include, but are not limited to, HeLa, 293 or Vero cells (as described in section 2.0 of the Specification on page 9, line 21.

Applicants have clarified claims 73 and 74 to recite formulation of the composition for administration to a “mammalian host cell culture,” or to a “human host cell culture”, and as such, now believe that both claims are free from further rejection under this section of the Statute, and respectfully request that the rejection be withdrawn, and that the claims now proceed to allowance.

## **2.7 REQUEST FOR ENTRY OF AMENDMENTS AFTER FINAL REJECTION**

Pursuant to 37 C. F. R. § 1.116, Applicants hereby request that the accompanying amendments after final action be entered, since the amendments offered clearly touch on the merits of the application, and clearly present the rejected claims in better form for allowance, or in the alternative, for consideration on appeal.

Applicants note that M. P. E. P. § 714.13 provides (in pertinent part) that “an amendment filed at any time after final rejection but before an appeal brief is filed, may be entered upon, or after filing of an appeal brief, provided the total effect of the amendment is to (A) remove issues for appeal, and/or (B) adopt examiner suggestions.”

Applicants have adopted the examiner’s suggestions concerning the required language in the specification for biological deposits made under the Budapest Treaty. As such, this amendment clearly places the rejected claims in condition for allowance; thus the amendment is properly entered at this time, pursuant to 37 C. F. R. §116.

Applicants have also complied with the Examiner’s request to provide greater clarity for claims 73 and 74, to properly identify the formulations for delivery to mammalian host cell cultures. This amendment also clearly places these rejected claims in condition for allowance. Applicants have also amended claim 41 to provide even greater clarity, and to remove any

questions from the mind of the Examiner concerning any possible "new matter" issue. Likewise, this amendment also clearly places the claims so rejected in condition for allowance. Applicants respectfully request that the amendment be entered and that the claims proceed to allowance.

In the alternative, it is also clear that each of the amendments herein places the claims in better condition for appeal; therefore, Applicants also believe that for this reason alone, the present amendment should be entered.

To facilitate continued pendency of the application for the Examiner to consider the allowability of the amended claims, pursuant to 37 C.F.R. § 1.113, Applicants have also concomitantly herewith filed the required Notice of Appeal to the Board, and the required appeal fee.

## **2.8 REQUEST FOR EXAMINER INTERVIEW**

Owing to the considerable progress made in the present case, and the removal of all rejections save the single remaining rejections under 35 U. S. C. §112, 1<sup>st</sup> paragraph, pursuant to M. P. E. P. § 714.12, Applicants hereby request the scheduling of a **Personal Interview After Final** with Examiner Leffers and Applicants' undersigned representative, Dr. Mark D. Moore, to materially assist in placing the application in condition for allowance, and to address any particular remaining issues in the mind of the Examiner, once he has had the opportunity to review this response and accompanying amendment. A telephone call from the Applicants' undersigned representative to the Examiner to arrange such an interview will be forthcoming within 10 days from the date of this Amendment and Response.

## 2.9 CONCLUSION

Applicants appreciate the helpfulness of the Examiner to proceed this case to allowance, and is pleased that the Examiner has concurred in our previous response that the issues relating to prior art have been successfully resolved. Applicants note the Examiner's indication that only a few issues were remaining at the time of the present Action, and are diligently working to address each of these issues to the Office's satisfaction.

In summary, Applicants believe this to be a full, timely and complete response to the outstanding Final Action, and further believe that all pending claims are free of any rejection under the statutes, and that the claims are now placed in condition for allowance through the entry of the accompanying amendment and consideration of the foregoing remarks.


Applicants expressly reserve the rights to re-file claims directed to the remaining embodiments of the invention in subsequent continuing applications. Should the Examiner have any questions concerning the accompanying amendment, response and related papers, a telephone call to the undersigned Applicants' representative is earnestly solicited.

Respectfully submitted,

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